

## 1 Easily Modifiable Macro Tag for Internet Advertising

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### 9 Field of the Invention:

10 The present invention relates to the internet and more particularly to systems and methods  
11 for displaying advertisements when web pages are viewed.

### 13 Background of the Invention:

14 Web browsers such as Microsoft's "Internet Explorer™" and Netscape's "Navigator™",  
15 provide a mechanism for viewing web pages that are located on the World Wide Web.  
16 Such web pages often include advertisements. Such advertisements can be stored as part  
17 of a web page; however, typically they are not stored as part of a web page. Instead  
18 advertisements are provided by linking to a separate server (i.e. an advertisement server)  
19 using a system such as that shown in Figure 1A.

21 Figure 1A illustrates a system that includes a conventional web site 10, a conventional user  
22 site 11 and an advertising server 12. Web site 10 includes a web page 10a. User site 11  
23 includes a display 11a and a web browser 11b, and advertising server 12 includes an  
24 advertisement 12a. The web page 11b is illustrated in Figure 1B. It includes a series of  
25 HTML (Hyper Text Markup Language) statements and a link statement 10u which has the  
26 URL (Uniform Resource Locator) address of advertisement 12a. When browser 10b  
27 receives and processes the URL statements in web page 10a, it retrieves and displays the  
28 advertisement 12a as directed by the link statement 10u.

30 While one simple link statement such as 10u might operate satisfactorily for a very simple  
31 advertisement, in general in order to properly display relatively complex advertisements in a  
32 wide variety of browsers, the number and complexity of the statements needed in web page  
33 10a increases. Furthermore, as new browsers (or more likely new versions of old

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66730" 960

browsers) come into use, the statements in web page 10a may need to be modified in order to properly display relatively complex advertisements.

It is noted that while Figure 1 shows a single web site 10 and a single browser 11, in most practical advertising situations there are hundreds if not thousands of web sites that have links to a particular advertisement. In such a situation if one wants to update the links, the HTML statements in each of these hundreds or thousands of web sites would have to be updates.

#### **Summary of the present invention:**

The present invention provides an improved method and system for providing HTML links to advertisements that facilitates updating the linking mechanism. With the present invention, a web page which is designed to display an advertisement includes a first relatively simple macro tag which provides a link to a first server. When a user's web browser retrieves the first web page, the browser will execute the first link and retrieve a file from the first server. The retrieved file will include the HTML instructions or Javascript required to display the desired advertisement. The user's browser will execute the instructions or script in the retrieved file and appropriately display the advertisement (e.g. a gif-image or Java applet).

With this invention it is relatively simple to update the instructions required to display a particular advertisement. Instead of changing the macro tags in each of the web pages which include links to the advertisement, the instructions on how to display the advertisement can be updated by merely updating a single file located on a single server which is independent and separate from the individual web sites.

#### **Brief Description of the Drawings:**

Figure 1 is an overall diagram of a prior art system.

Figure 2 is <sup>an overall</sup> ~~a overall~~ diagram of a first preferred embodiment of the present invention.

Figure 3 is a block flow diagram of the operation of the present invention.

Figures 4A and 4B illustrate the content of a web page which includes a macro tag according to the present invention.

1 Figure 5 is a block diagram of the operations performed by the instructions in a macro tag  
2 which implements the preferred embodiment of the present invention.

3 Figure 6 is an overall diagram of a second embodiment of the present invention.  
4

5 **Description of Preferred Embodiment:**

6 An overall schematic diagram of a preferred embodiment of the invention is shown in Figure  
7 2. The embodiment includes four computers 20, 21, 22 and 23, that are interconnected via  
8 the internet. The data flow between the computers is indicated by the arrows between the  
9 various units. It should be understood that from a physical point of view, each of the  
10 computers has a conventional connection to an ISP (Internet Service Provider) and the ISP  
11 sends addressed messages to and from each of the computers using conventional internet  
12 HTTP (Hypertext Transfer Protocol). The arrows in Figure 2 therefore represent logical  
13 data flow paths rather than physical connections.  
14

15 Computer 21 is a conventional computer which has access to the internet. It includes a  
16 display 21a and a browser 21b. Browser 21b can be any one of the conventional,  
17 commercially available and widely used browser programs such as the Internet Explorer™  
18 browser available from Microsoft Corporation or the Netscape Navigator™ browser  
19 available from America On-line Corporation. Computer 20 represents a conventional  
20 internet web site which includes a web page 20a that can be accessed via the internet.  
21

22 It is noted that computer 20 is meant to illustrate a representative web site. Likewise  
23 computer 21 is meant to illustrate a representative user's client site. The World Wide Web  
24 includes many thousands of user client sites and many web sites such as site 20. A  
25 practical commercially viable implementation of the invention would include hundreds if not  
26 thousands of web sites 20 which have web pages which have the characteristics described  
27 below relative to web page 20a. Thus, user's site 21 and web site 20 are meant to be  
28 illustrative of many such sites on the internet.  
29

30 Computer 22 is a web server that has stored therein advertisements (e.g. a gif-images or  
31 Java applets) which are displayed in various web pages when an advertisement is  
32 accessed with an appropriate URL. Computer 23 is a web server that includes a Javascript  
33 file 23a which can be accessed via an appropriate URL. Computer 23 is referred to as a

1 command server since it provides commands to browser 21b. It is noted that from a  
2 physical point of view, servers 22 and 23 could be implemented in one computer which  
3 includes programs that perform all of the functions herein described as being performed by  
4 the two servers 22 and 23.

5  
6 The overall operation of the system is illustrated by the flow chart in Figure 3. The process  
7 begins when the user's browser 21b requests web page 20a (block 31). That is, user's  
8 browser 21b sends an HTTP request for a web page with the URL address of web page  
9 20a. In response to the request, the web page 20a is sent to browser 21b via the internet  
10 (block 33). Upon receipt to the web page the browser 21b will execute the HTML  
11 instructions which are in the web page 20a (block 34). The HTML in web page 20a  
12 includes a macro tag (which will be described in detail later) which includes a link with the  
13 URL address of the Javascript file 23a on web server 23 (block 35). In response to the link  
14 request, server 23 sends file 23a to browser 21b. (block 36). Next, the browser 21b  
15 executes the Javascript in file 23a (block 37). The Javascript in file 23a (which will be  
16 described in detail later) includes a link to the advertisement 22a on server 22 (block 38).  
17 In response to the link, the advertisement 22a is sent to browser 21b and displayed on  
18 display 21a (block 39).

19  
20 Figure 4A illustrates the contents of web page 10a. In general page 10a has a series of  
21 conventional HTML commands with associated text and images. Of significance to the  
22 present invention is the fact that the web page includes a macro tag 41. Figure 4B  
23 illustrates the structure of the contents of macro tag 41. The macro tag has two principal  
24 parts. There is a <sup>Header</sup> header 42 and a body 43 as is conventional in HTML. The header  
25 defines some variables and it also defines a function named "FlycastNoScriptScr()". The  
26 body 43 includes a Link 43a to Javascript file 23a, a number of conditional execution  
27 statement 43b and a link 43c which is executed if the particular user's browser that is  
28 executing the web page does not have the capability of executing Javascript Commands.

29  
30 It is noted that the term "tag" is a defined term in the HTML standard. In HTML tags are  
31 used to identify the major structural components in a document such as headings, lists, and  
32 paragraph. As used herein the term "macro tag" is used to mean a series or group of  
33 HTML statements that can be inserted into and form part of a HTML document.

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Figure 5 is a block diagram that illustrates the structure and content of Javascript file 23a. First a number of variables are set depending upon the type and version of the browser that is executing the file (block 51). Next a special function named "FlycastSuppressError" is defined and executed if a particular type of browser is being user by the user (block 52). A function named "FlycastDeliverAd" is defined (block 53). Finally the advertisement is displayed in response to a number of conditional statements which are dependent upon the type of browser being used by the user (block 54)

The HTML in macro tag 41 is given in attached Appendix A and the Javascript in file 23a is given in attached Appendix B. While the code given in the appendices is self explanatory to those skilled in the art, the following explanation is given to further facilitate an understanding of the code. It should be noted that HTML code is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by any-one of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights whatsoever. Duplication of the copyrighted material as part of a non-patent document is prohibited. Creation of derivative works is prohibited.

The macro tag 41 begins with the definition and setting of two sets of values. The fist set of values is established by the system operator of web site 20. These variable are:

```
FlycastSite      = SITE_NAME
FlycastPage      = PAGE_NAME
FlycastWidth     = 468;
FlycastHeight    = 60;
FlycastNewAd     = true;
```

The first two values specify the site and page identifying the web page 20a for later operations in the program. The next two values establish the size of the advertisement. The variable FlycastNewAd is used to control multiple ads. For example if one page has three advertisements, this is set to "true" or "false" to indicate if the same advertisement is to appear three times or if there are to be three different advertisements on the page.

1 The second set of values in macro tag 41 are preset by the company that is handling the  
2 advertising. They are:

3 FlycastLoaded = false;  
4 FlycastKeyword = "";  
5 FlycastVersion = 2.0;

6 The variables FlycastLoaded and FlycastKeyword are used during the execution of the  
7 program. The third variable is used to identify the version of the macro tag. Next the  
8 function FlycastNoScriptSrc is defined. This function is used to display the advertisement  
9 under certain conditions which are explained below.

10

11 The body of the HTML is used to display the advertisement in a manner consistent with the  
12 particular type of browser that is being utilized by the user. Three major types of browsers  
13 are accommodated as follows:

14 Type 1: Browsers that do not understand Script (i.e. do not support the <SCRIPT>-tag)

15 Type 2: Browsers that understand Script but which do not understand the SRC attribute  
16 which specifies the location of an external script (i.e. do not support the <SCRIPT  
17 SRC>-tag).

18 Type 3: Browsers which understand Script and the SRC attribute.

19

20 There are four possible actions that can be taken or executed. The four possible actions  
21 are:

22 Action A: (which is defined in the Javascript file 23a which is named

23 <SCRIPT SRC="http://jeeves.flycast.com/FlycastUniversal/FlycastUniversal.js"  
24 LANGUAGE="JAVASCRIPT"></SCRIPT>  
25 <SCRIPT LANGUAGE="JAVASCRIPT">

26

27 Action B1:

28 if (FlycastLoaded) FlycastDeliverAd();

29

30 Action B2:

31 else FlycastNoScriptSrc();

32

33

1 Action C:

2 <NOSCRIPT><A target=\_top HREF="http://adex3.flycast.com/server  
3 /click/SITE\_NAME/PAGE\_NAME/123"><IMG SRC="http://adex3.flycast.com/server  
4 /ad/SITE\_NAME/PAGE\_NAME/123" border=0 width=468  
5 height=60></A></NOSCRIPT>  
6

7 The following table indicates which actions are taken for which type of browsers.

Type of Browser	Type 1	Type 2	Type 3
Action A	No	No	Yes
Action B1	No	No	Yes
Action B2	No	YES	No
Action C	YES	No	No

8

9

10 The Javascript file 23a begins by setting a couple of variables which are used to determine  
11 if it has been successfully invoked by the <SCRIPT SRC>-tag. These variables are:

12 FlycastLoaded = true;  
13 FlycastDeliverAdExecuted = false;  
14

15 Next some variables are set depending upon what type of browser is being used by the  
16 user. These variables are:

17 FlycastFoundMSIE = navigator.userAgent.indexOf("MSIE") >= 0;  
18 FlycastFoundMSIE2 = navigator.userAgent.indexOf("MSIE2") >= 0 ||  
19 navigator.userAgent.indexOf("MSIE 2") >= 0;  
20 FlycastFoundMSIE3 = navigator.userAgent.indexOf("MSIE 3") >= 0;  
21  
22 FlycastFoundNN = navigator.userAgent.indexOf("Mozilla/") >= 0 &&  
23 !FlycastFoundMSIE;  
24 FlycastFoundNN2 = navigator.userAgent.indexOf("Mozilla/2.") >= 0 &&  
25 !FlycastFoundMSIE;  
26 FlycastFoundNN3 = navigator.userAgent.indexOf("Mozilla/3.") >= 0 &&  
27 !FlycastFoundMSIE;

1

2 Next a test is made to determine if the Browser being used is Netscape Version 3. If it is  
3 found that the browser is Netscape Version 3, the "window.onerror" variable is set to a  
4 function which reloads the page rather than displaying an error message. The following  
5 code performs this operation when it detects a Netscape Version 3 browser.

```
6     function Flycst SuppressError(){
7         window.location.reload();
8     }
9     if (FlycastFoundNN3) {
10         window.onerror = FlycastSuppressError;
11     }
```

12

13 Next the function FlycastDeliverAd() is defined as follows. It is noted that this function  
14 includes code which creates a random number that is used to defeat caching by the  
15 browser.

16

```
17     function FlycastDeliverAd () {
18         if (FlycastDeliverAdExecuted) {
19             return;
20         }
21         FlycastAdServer      = "http://adex3.flycast.com/server ";
22         FlycastNow           = new Date();
23
24         //concoct random number to defeat caching
25         if (FlycastNewAd) {
26             FlycastRandom      = FlycastNow.getTime();
27             FlycastRandom      = FlycastRandom % 1000;
28         }
```

29 Next the advertisement is displayed in one of three ways depending upon the  
30 characteristics of the browser that is being used. This is accomplished by the following  
31 code:

```
32     //Note: order is important
33     if (FlycastFoundMSIE2) {
```



```

1         document.write('<A HREF="' + FlycastAdServer + '/click' +
2 FlycastSiteInfo + '"></A>');
5     }
6
7     else if (FlycastFoundMSIE3) {
8         document.write('<IFRAME SRC="' + FlycastAdServer + '/iframe' +
9 FlycastSiteInfo + '" scrolling="no" marginwidth=0 marginheight=0 frameborder=0
10 vspace=0 hspace=0 width=' + FlycastWidth + ' height=' + FlycastHeight +
11 '></IFRAME>');
12     }
13
14     else {
15         document.write('<S' + 'CRIPT SRC="' + FlycastAdServer + '/js' +
16 FlycastSiteInfo + '" LANGUAGE="JAVASCRIPT"></S' + 'CRIPT>');
17     }
18     FlycastDeliverAdExecuted    = true;
19 }
20
21 //calling a function defined in a <S_CRIPT S_RC=..> from the HTML causes NN3 to
22 display the text between <S_CRIPT>..</S_CRIPT>
23 if (FlycastFoundNN3 && FlycastPrintTag) {
24     FlycastDeliverAd();
25 }
26
27 With the present invention, as new browser versions become available or as when bugs are
28 found in browsers that cause advertisements to be displayed improperly, the Javascript in
29 file 23a can be changed. Changing the macro tag in web page 20a is much more difficult
30 because there are typically many web pages that include the same macro tag as that in
31 web page 20a.
32
33 It should be noted that advertisement 22a does not constitute a single fixed advertisement.
34 Advertisement 22a could be a specific fixed advertisement; however, in a typical

```



# 1 Appendix A:

2

```

3 <!-- Begin Flycast Ad Copyright ©1998 Flycast Communications. -->
4 <SCRIPT LANGUAGE="JAVASCRIPT">
5 <!--
6 /***** following is configured by site *****/
7     FlycastSite      = "SITE_NAME";
8     FlycastPage      = "PAGE_NAME";
9     FlycastWidth     = 468;
10    FlycastHeight    = 60;
11    FlycastNewAd      = true;      //used for multiple ads
12
13 /***** following must not be changed *****/
14    FlycastLoaded     = false;
15    FlycastKeyword    = ""; //used dynamically by cgi-script for keyword
16    FlycastVersion    = 2.0;
17    function FlycastNoScriptSrc() {
18        if ((navigator.userAgent.indexOf("Mozilla/2.") >= 0) &&
19            !(navigator.userAgent.indexOf("MSIE") >= 0)) return;
20        FlycastRandom = (new Date()).getTime() % 1000;
21        document.write('<I' + 'FRAME
22 SRC="http://adex3.flycast.com/server/iframe/' + FlycastSite + '/' +
23 FlycastPage + '/' + FlycastRandom + '" scrolling="no" marginwidth=0
24 marginheight=0 frameborder=0 vspace=0 hspace=0 width=' + FlycastWidth + '
25 height=' + FlycastHeight + '>');
26        document.write('<A target=_top
27 HREF="http://adex3.flycast.com/server/click/' + FlycastSite + '/' +
28 FlycastPage + '/' + FlycastRandom + '">');
29        document.write('<I' + 'MG
30 SRC="http://adex3.flycast.com/server/ad/' + FlycastSite + '/' +
31 FlycastPage + '/' + FlycastRandom + '" border=0 width=' + FlycastWidth + '
32 height=' + FlycastHeight + '>');
33        document.write('</A></IFRAME>');
34    }
35 //-->
36 </SCRIPT>
37 <!-- End Flycast Ad Header Copyright ©1998 Flycast Communications. All
38 rights reserved. Patent Pending -->
39 </HEAD>
40 ....
41 <BODY>
42
43 <SCRIPT SRC="http://js.flycast.com/FlycastUniversal.js"
44 LANGUAGE="JAVASCRIPT"></SCRIPT>
45 <SCRIPT LANGUAGE="JAVASCRIPT">
46 <!--
47     if (FlycastLoaded)      FlycastDeliverAd();
48     else                    FlycastNoScriptSrc();
49 //-->
50 </SCRIPT>
51 <NOSCRIPT>
52 <A target=_top
53 HREF="http://adex3.flycast.com/server/click/SITE_NAME/PAGE_NAME/123">

```



[illegible]

## 2 Appendix B:

```

3 // Copyright 1998 Flycast Communications.
4 //
5 // Version 2.3
6
7 FlycastLoaded                = true;
8 FlycastDeliverAdExecuted    = false;
9 FlycastFoundMSIE            = navigator.userAgent.indexOf("MSIE") >= 0;
10 FlycastFoundMSIE2           = navigator.userAgent.indexOf("MSIE2") >= 0 ||
11 navigator.userAgent.indexOf("MSIE 2") >= 0;
12 FlycastFoundMSIE3           = navigator.userAgent.indexOf("MSIE 3") >= 0;
13 FlycastFoundNN               = navigator.userAgent.indexOf("Mozilla/") >= 0 &&
14 !FlycastFoundMSIE;
15 FlycastFoundNN2              = navigator.userAgent.indexOf("Mozilla/2.") >= 0
16 && !FlycastFoundMSIE;
17 FlycastFoundNN3              = navigator.userAgent.indexOf("Mozilla/3.") >= 0
18 && !FlycastFoundMSIE;
19
20 function FlycastSuppressError() {
21     window.location.reload();
22     return true;
23 }
24 if (FlycastFoundNN3) {
25     window.onerror      = FlycastSuppressError;
26 }
27
28 function FlycastDeliverAd () {
29     if (FlycastDeliverAdExecuted) {
30         return;
31     }
32     FlycastAdServer      = "http://adex3.flycast.com/server ";
33     FlycastNow            = new Date();
34
35     //concoct random number to defeat caching
36     if (FlycastNewAd) {
37         FlycastRandom     = FlycastNow.getTime();
38         FlycastRandom     = FlycastRandom % 1000;
39     }
40
41     //provides info on site (for bidding) and random number (for cache-
42     defeating)
43     FlycastSiteInfo       = "/" + FlycastSite + "/" + FlycastPage +
44     "/" + FlycastRandom;
45     if (FlycastVersion >= 2.0) {
46         FlycastSiteInfo   += "?" + FlycastKeyword;
47     }
48
49     if (FlycastFoundMSIE2) {
50         document.write('<A HREF="' + FlycastAdServer + '/click' +
51 FlycastSiteInfo + '"><img src="' + FlycastAdServer + '/ad' +
52 FlycastSiteInfo + '" scrolling="no" marginwidth=0 marginheight=0

```

